SECTION II. INSTALLATION

11.2.1 **INTRODUCTION**

To install the freezing rain sensor, the mounting pole is first installed onto the site pedestal. The electronics enclosure is then installed on the mounting pole, and finally, electrical connections are made. Following installation, the sensor must be inspected in accordance with the instructions contained in Section V. Table 11.2.1 provides the step-by-step freezing rain sensor installation procedure as shown in figure 11.2.1.

Table 11.2.1. Freezing Rain Sensor Installation Procedures

Step	Procedure
	Tools and Materials Required: Two 15/16-inch wrenches 7/16-inch wrench and torque driver 11/32-inch wrench Large flat-tipped screwdriver Large pliers (12 inch, 2-1/4 inch capacity, curved jaw) 7/16-inch hex key wrench and torque driver Cable ties **WARNING** Death or severe injury may result if power is not removed from sensor prior to maintenance activities. Ensure that circuit breakers (located in DCP) supplying power to sensor are set to off (right) position. The circuit breakers are labeled. **CAUTION** This sensor requires that a proper ground be established and maintained for safe operation. DO NOT apply AC power or perform maintenance until the ground condition is verified in accordance with paragraph 11.5.2.1. **NOTE** Freezing rain sensor installation should only be accomplished when environmental conditions are as specified for field calibration; otherwise, the unit cannot be field-calibrated immediately after installation.
1	Ensure that circuit breakers on freezing rain sensor circuit breaker module inside DCP equipment cabinet are set to off (right) position.
2	Position sensor mounting pole onto site mounting pedestal. Orient mounting pole so that electronics enclosure opens toward walkway.
3	Using two 15/16-inch wrenches, four bolts, eight washers, four lockwashers, and four nuts, secure mounting pole to pedestal. For each bolt, use one washer on top side of mounting pole flange and one on bottom side of pedestal flange. Place lockwasher on underside of bottom washer and secure with nut.
4	Ensure that plastic probe cap and protective shipping cover are installed over sensor Probe Assembly A1A1.
5	Position electronics enclosure on mounting pole.
6	While supporting electronics enclosure and using a 7/16-inch hex key wrench, secure enclosure to pole by tightening four captive bolts. Using torque driver, torque bolts to 45 inch-pounds.

Table 11.2.1. Freezing Rain Sensor Installation Procedures -CONT

Step	Procedure
7	Using flat-tipped screwdriver, loosen four captive bolts securing hinged sensor access door and open door.
8	Locate and remove ESD protective conduit cap from next to the external ground stud.
9	Route ac power wiring and fiberoptic cables through access hole in bottom of electronics enclosure.
10	Using large pliers and supplied hardware, connect flexible conduit to electronics enclosure.
11	Using pliers and split bolt connector, connect 10 American wire gauge (AWG) sensor ground wire to raceway ground strap.
	NOTE When installing site ground wire to sensor, ensure that sufficient slack exists to allow ground wire to be secured to sensor mounting pole.
12	Using 7/16-inch wrench, remove sensor-supplied nut from ground stud located at bottom right of enclosure. Use nut to connect other end of sensor ground wire to ground stud. Torque nut to 7 foot-pounds.
13	Using cable ties, secure sensor ground wire and cable conduit to mounting pole.
	CAUTION Electronics Processor Board A1A2 is a Class I electrostatic discharge (ESD) component. To avoid damage to electronics processor board, use proper ESD handling procedures including the use of a ground strap while performing the following steps.
14	Using small flat-tipped screwdriver, release catches holding plastic cover in front of ac terminal board connector J1. Remove plastic cover.
15	On model 0872C3 only, using 11/32 inch wrench, connect green wire (chassis ground) to E1.
16	Using flat-tipped screwdriver, connect ac power wiring to ac terminal board connector J1 as follows: Wire color / Terminal / Function Black / J1-1 / 115 vac (electronics) White / J1-2 / Neutral (electronics) Green / J1-3 / Chassis ground (model 0872C2 only) Red / J1-4 / 115 vac (heater) Yellow / J1-5 / Neutral (heater)
17	Install protective plastic cover in front of ac terminal board connector J1.
18	Remove plastic covers from fiberoptic cables and connect transmit (TX) cable to TRANSMIT connector of fiberoptic module and receive (RX) cable to RECEIVE connector.
19	Using large flat-tipped screwdriver, close and secure freezing rain sensor access door.
20	Remove plastic probe cap and protective shipping cover from probe assembly, taking care not to touch probe.
21	Check sensor frequency using either OID REVUE-SENSOR-12HR page or laptop computer (Z1 command). If ambient temperature is 0°C ±10°C, verify that frequency is 40,000 ±10 hertz.

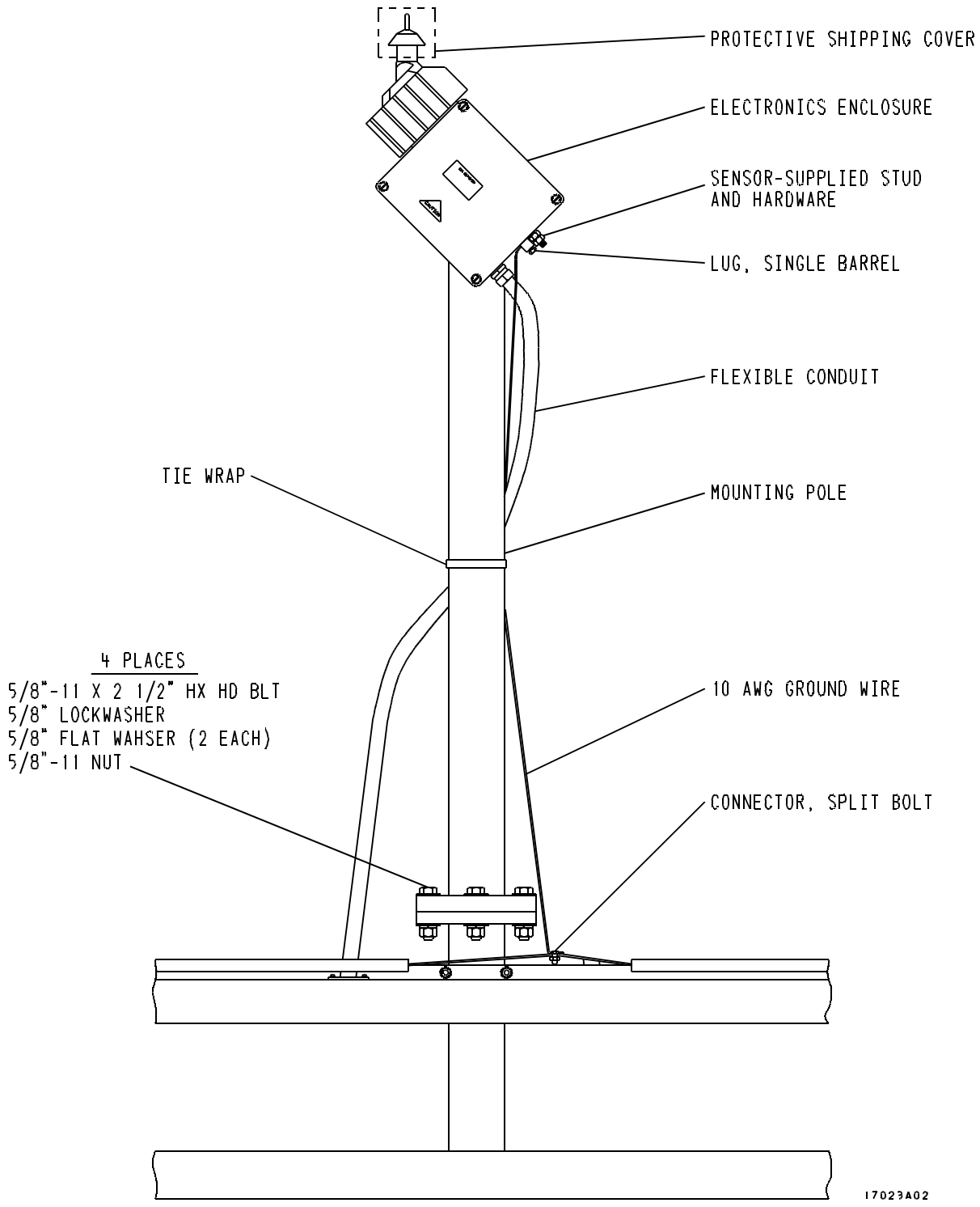

Figure 11.2.1. Freezing Rain Sensor Installation